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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,197	03/01/2002	Ajay Kumar	5681-11800	8610

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EXAMINER
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HWANG, JOON H

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/087,197	<b>Applicant(s)</b> KUMAR ET AL.	
	<b>Examiner</b> Joon H. Hwang	<b>Art Unit</b> 2162	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The applicants amended claim 3 in the amendment received on 10/28/04.

The pending claims are 1-20.

### ***Response to Arguments***

2. Applicant's arguments filed in the amendment received on 10/28/04 have been fully considered but they are not persuasive.

The applicants argue that Bauer clearly does not teach a plurality of application servers and clients are not servers by definition. However, the examiner respectfully traverses. A single computer can be a client or a server depending on a role. As a requester of data, the computer is a client. As a provider of data, the same computer is a server. The first application server is a node that requests backup by providing synchronization data, thus acting as a client. The distributed store is a node that processes a received request by synchronizing data of the distributed store with the received data, thus acting as a server. In this sense, Bauer teaches a distributed store (i.e., a central database configured to be synchronized) and a plurality application servers (i.e., computers or nodes providing synchronization data, line 50 in col. 1 thru line 67 in col. 2, lines 13-25 in col. 4, fig. 1, and fig. 2).

Bauer discloses a server node storing data (i.e., in a central database) for all clients and supporting multiple simultaneous users (lines 36-47 in col. 6). This teaches the distributed store (i.e., the server node) configured for access by a plurality of application servers (i.e., client nodes).

Bauer discloses a log or an (snapshot) image (lines 42-53 in col. 9) that teaches session data.

Bauer teaches detecting modifications at a client node (lines 42-53 in col. 9) by utilizing a log or an (snapshot) image, which teaches accessing the session data within the application server.

Therefore, the applicants' arguments are not persuasive.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 5, 8-12, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bauer et al. (U.S. Patent No. 5,884,325).

With respect to claim 1, Bauer discloses a central database of a server (a distributed store) comprising a primary state of session data configured for access by a plurality of client nodes (a plurality of application servers), wherein the session data comprises a plurality of attributes (line 50 in col. 1 thru line 67 in col. 2, lines 13-25 in col. 4, fig. 1, and fig. 2). Bauer discloses a first client node (a first application server) of the plurality of client nodes (application servers), comprising a client state of the session data accessible to processes executing within the application server, wherein the first client node (a first application server) is configured to track accesses of the attributes of

the client state (line 50 in col. 1 thru line 67 in col. 2, lines 57-67 in col. 6, line 66 in col. 7 thru line 17 in col. 8, lines 58-64 in col. 8, fig. 1, and fig. 2). Bauer discloses the distributed store is configured to synchronize the primary state with the client state according to the tracked accessed attributes (line 50 in col. 1 thru line 67 in col. 2 and lines 22-53 in col. 9).

With respect to claim 2, Bauer teaches the first client node (the first application server) is configured to store information identifying the accessed attributes to track accesses of the attributes of the client state (line 50 in col. 1 thru line 67 in col. 2, lines 22-67 in col. 9, and lines 1-5 in col. 10).

With respect to claim 4, Bauer discloses the central database of the server (a distributed store) is configured to synchronize only mutable attributes to synchronize the primary state with the client state (line 50 in col. 1 thru line 67 in col. 2, lines 22-67 in col. 9, and lines 1-5 in col. 10).

With respect to claim 5, Bauer teaches the first client node (the first application server) is configured to perform a comparison of the tracked accessed attributes and a before-image data (a benchmark of the session data) comprising a previous version of the one or more attributes to determine a subset of the tracked accessed attributes that are modified in respect to the before-image data (the benchmark of the session data) and the central database of the server (the distributed store) is configured to update the primary state with the subject of the accessed attributes that have been modified to synchronize the primary state with the client state (line 50 in col. 1 thru line 67 in col. 2, lines 31-50 in col. 3, lines 22-67 in col. 9, and lines 1-5 in col. 10).

The limitations of claims 8, 9, 11, 15, and 17 are rejected in the analysis of claim 1 above, and these claims are rejected on that basis.

The limitations of claims 10 and 16 are rejected in the analysis of claim 2 above, and these claims are rejected on that basis.

The limitations of claims 12 and 18 are rejected in the analysis of claim 5 above, and these claims are rejected on that basis.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (U.S. Patent No. 5,884,325) in view of Bauer et al. (U.S. Patent No. 5,870,759).

With respect to claim 3, Bauer ('325) discloses the claimed subject matter as discussed above. Bauer ('325) teaches the first client node (the first application server) is configured to track mutable attributes to track accesses of the attributes of the client state (line 50 in col. 1 thru line 67 in col. 2, lines 22-67 in col. 9, and lines 1-5 in col. 10). Bauer ('325) discloses the client node configured not to send data that have not been modified (lines 66-67 in col. 9). Bauer ('325) does not explicitly disclose immutable attributes. However, Bauer ('759) discloses a database having mutable and immutable data items (lines 28-34 in col. 8). Bauer ('759) also discloses the client node configured

not to send data that have not been modified (lines 5-6 in col. 10) in order to minimize a cost of synchronization and communication (lines 56-59 in col. 1). This teaches not tracking immutable attributes. Therefore, based on Bauer ('325) in view of Bauer ('759), it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Bauer ('759) to the system of Bauer ('325) for immutable attributes in order to minimize a cost of synchronization and communication.

7. Claims 6, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (U.S. Patent No. 5,884,325) in view of Morris (U.S. Patent No. 5,813,017).

With respect to claim 6, Bauer discloses the claimed subject matter as discussed above. Bauer further discloses many other comparison methods for determining modifications since a last synchronization (lines 42-53 in col. 9). Bauer does not explicitly disclose a binary comparison. However, Morris discloses a binary comparison for determining differences for database synchronization (abstract and line 47 in col. 11 thru line 13 in col. 12). Therefore, based on Bauer in view of Morris, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Morris to the system of Bauer for a binary comparison in order to determine differences of two versions of data for an effective database synchronization.

The limitations of claims 13 and 19 are rejected in the analysis of claim 6 above, and these claims are rejected on that basis.

8. Claims 7, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (U.S. Patent No. 5,884,325) in view of Lin et al. (U.S. Patent No. 6,546,135).

With respect to claim 7, Bauer discloses the claimed subject matter as discussed above. Bauer further discloses many other comparison methods for determining modifications since a last synchronization (lines 42-53 in col. 9). Bauer does not explicitly disclose an object graph comparison. However, Lin discloses comparing data differences using DAG (directed acyclic graph) representation, which teaches an object graph comparison (abstract, line 40 in col. 7 thru line 14 in col. 8, and fig. 5). Therefore, based on Bauer in view of Lin, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Lin to the system of Bauer for an object graph comparison in order to determine differences of two versions of data for an effective database synchronization.

The limitations of claims 14 and 20 are rejected in the analysis of claim 7 above, and these claims are rejected on that basis.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 571-272-4036. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2162

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joon Hwang   
Patent Examiner  
Technology Center 2100

3/14/05

  
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PRIMARY EXAMINER